

EXHIBIT 1

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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

CIVIL ACTION NO. 3:20-CV-06754

**GOOGLE LLC,
v.
SONOS, INC.**

SUPPLEMENTAL EXPERT REPORT OF JAMES E. MALACKOWSKI

December 9, 2022



IFTTT's operational and functional capabilities, including building, creating, saving, and invoking different groups of speakers.⁴⁹¹

Given these abilities, I find that, contrary to Dr. Schonfeld's claim that "the technology contained within IFTTT is totally unrelated to the technology of the '885 Patent," the IFTTT service allows a user to create, name, and save a speaker group for later recall, providing comparable functionality to the Asserted Claims of the '885 Patent.⁴⁹² Dr. Schonfeld also argues that IFTTT is "does not appear targeted at facilitating or suggesting grouping of speakers...because the whole point of IFTTT is to allow a user to access a huge number of apps and create a near-infinite number of applets that automate tasks for users."⁴⁹³ I do not disagree with Dr. Schonfeld that IFTTT offers immense capabilities outside of the ability to group speakers, such as "creating notifications based on the Weather Underground app, [...] which has nothing in common with the alleged invention."⁴⁹⁴ However, my analysis of the IFTTT service is merely the first step in my analysis in calculating a quantitative indicator for the Zone Scene technology; it does, despite Dr. Schonfeld's opinion, allow for a user to create similar, albeit less valuable, speaker groups similar to those contemplated in the Zone Scene Patents. As such, IFTTT's ability to charge for the ability to create this service provides an initial indicator to the value of the Zone Scene Patents.

12.2.4.2 IFTTT Pricing History

From its inception through September 2020, IFTTT offered services to its users for free, with no limitations in terms of speed, applet count, or access. In September 2020, IFTTT rolled out two subscription plans: "Standard" and "Pro."⁴⁹⁵ At that time, the "Standard" plan would allow users to turn on unlimited applets and to create up to three applets, but did not allow "multi-step applets."⁴⁹⁶ The "Standard" subscription had no monthly fee.⁴⁹⁷ At the same time, the "Pro" plan provided users with unlimited applet creation, multi-step applets with queries, conditional logic statements, and multiple actions (*i.e.*, "if-then-then" statements), exclusive customer support, and faster execution.⁴⁹⁸ Initially, IFTTT's initial pricing model for the "Pro" subscription gave users the ability to set their price as one of four options: \$3.99, \$5.99, \$9.99, and custom.⁴⁹⁹ The custom field allowed users to input the price they wanted to pay, as long as it was at least \$1.99 per month.⁵⁰⁰ The creator of IFTTT thought the true value of the technology was \$9.99 per month, and it was

⁴⁹¹ Opening Almeroth Report, pp. 386-395.

⁴⁹² Rebuttal Expert Report of Dan Schonfeld, Ph.D., July 27, 2022, p. 37.

⁴⁹³ Rebuttal Expert Report of Dan Schonfeld, Ph.D., July 27, 2022, pp. 38, 45.

⁴⁹⁴ Rebuttal Expert Report of Dan Schonfeld, Ph.D., July 27, 2022, pp. 38, 45.

⁴⁹⁵ "How much does IFTTT Cost?" *Automate Your Life*, <https://automatelife.net/how-much-does-ifttt-cost/>.

⁴⁹⁶ "How much does IFTTT Cost?" *Automate Your Life*, <https://automatelife.net/how-much-does-ifttt-cost/>.

⁴⁹⁷ "How much does IFTTT Cost?" *Automate Your Life*, <https://automatelife.net/how-much-does-ifttt-cost/>.

⁴⁹⁸ "How much does IFTTT Cost?" *Automate Your Life*, <https://automatelife.net/how-much-does-ifttt-cost/>.

⁴⁹⁹ Hearn, P., "IFTTT Pricing: Is Pro Worth The Cost?" *Online Tech Tips*, <https://www.online-tech-tips.com/software-reviews/ifttt-pricing-is-pro-worth-the-cost/>; Varughese, A., "How much does IFTTT Cost?" *Automate Your Life*, <https://automatelife.net/how-much-does-ifttt-cost/>.

⁵⁰⁰ Hearn, P., "IFTTT Pricing: Is Pro Worth The Cost?" *Online Tech Tips*, <https://www.online-tech-tips.com/software-reviews/ifttt-pricing-is-pro-worth-the-cost/>; Varughese, A., "How much does IFTTT Cost?" *Automate Your Life*, <https://automatelife.net/how-much-does-ifttt-cost/>.



expected that eventually the lower subscription fees would be phased out.⁵⁰¹ This “Set your price” payment model only lasted from September 2020 through the end of October 2020.⁵⁰²

Figure 34: IFTTT “Pro” Subscription Pricing – September 2020⁵⁰³

2. Payment options

Set your price /month

☐ **\$3.99**
☐ **\$5.99**
☒ **\$9.99**

(\$1.99 USD or more)

For a limited time, you may set your price for IFTTT Pro and we will honor it indefinitely. All subscriptions are in US\$ and renew monthly.

As of November 2020, IFTTT still offered the same “Standard” and “Pro” plans, but the pricing for the “Pro” subscription had changed.⁵⁰⁴ Rather than allow users to set the price, the “Pro” subscription was only offered at \$3.99 per month.⁵⁰⁵

In November 2021, IFTTT began offering three subscription plans: “Free”, “Pro”, and “Pro+.”⁵⁰⁶ As of November 2022, IFTTT still offers the same three plans, but at lower price points.⁵⁰⁷ The “Free” plan allows users to create up to five applets, run at standard applet speeds, make and use published applets, unlimited applet runs, free mobile access, and simple no-code integrations.⁵⁰⁸ Like the “Standard” plan, the “Free” plan does not allow users to create “multi-action applets.” The “Pro” plan, priced at \$2.50 per month, allows users to create up to twenty applets, run at increased applet speeds, create multi-action applets, and have access to customer support.⁵⁰⁹ The “Pro+” plan, priced at \$5.00 per month, allows users to create unlimited applets, have access to every “Pro” subscription feature, connect multiple accounts, use queries and filter code, access developer tools, and have access to priority customer support.⁵¹⁰

⁵⁰¹ Hearn, P., “IFTTT Pricing: Is Pro Worth The Cost?” *Online Tech Tips*, <https://www.online-tech-tips.com/software-reviews/ifttt-pricing-is-pro-worth-the-cost/>.

⁵⁰² Hearn, P., “IFTTT Pricing: Is Pro Worth The Cost?” *Online Tech Tips*, <https://www.online-tech-tips.com/software-reviews/ifttt-pricing-is-pro-worth-the-cost/>; “Find the right plan,” *IFTTT*, <https://web.archive.org/web/20201103212957/https://ifttt.com/plans>.

⁵⁰³ Hearn, P., “IFTTT Pricing: Is Pro Worth The Cost?” *Online Tech Tips*, <https://www.online-tech-tips.com/software-reviews/ifttt-pricing-is-pro-worth-the-cost/>.

⁵⁰⁴ “Find the right plan,” *IFTTT*, <https://web.archive.org/web/20201103212957/https://ifttt.com/plans>.

⁵⁰⁵ “Find the right plan,” *IFTTT*, <https://web.archive.org/web/20201103212957/https://ifttt.com/plans>.

⁵⁰⁶ “Find the plan for you,” *IFTTT*, <https://web.archive.org/web/2021111223804/https://ifttt.com/plans>.

⁵⁰⁷ “Find the plan for you,” *IFTTT.com*, <https://ifttt.com/plans>.

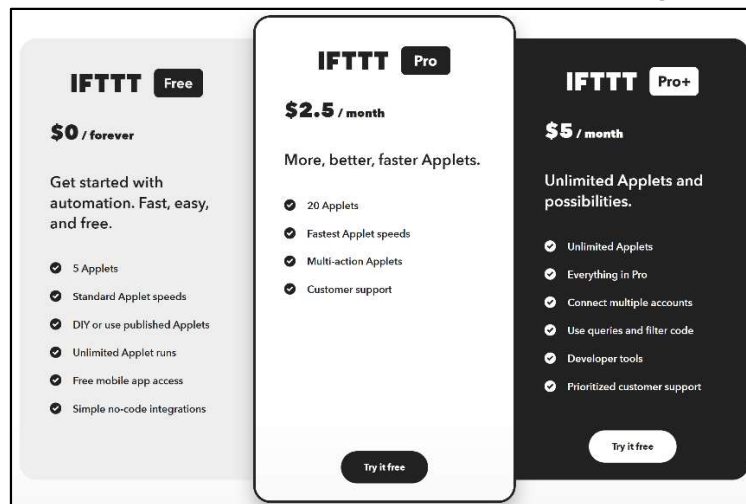
⁵⁰⁸ “Find the plan for you,” *IFTTT.com*, <https://ifttt.com/plans>.

⁵⁰⁹ “Find the plan for you,” *IFTTT.com*, <https://ifttt.com/plans>.

⁵¹⁰ “Find the plan for you,” *IFTTT.com*, <https://ifttt.com/plans>.



Figure 35: IFTTT “Free,” “Pro,” and “Pro+” Subscription Pricing – November 2022⁵¹¹



12.2.4.3 Zone Scene Reasonable Royalty Quantitative Indicator

IFTTT’s ability to provide similar functionality to the zone scene technology relies on the creation of two multi-action applets. I understand that IFTTT is both easy to use and requires no technical expertise.⁵¹² To help with building an applet, IFTTT offers pre-made triggers and actions. For example, IFTTT offers a trigger called “Button press,” actions for Sonos devices including “Resume” playback and a “Start playback” action for Spotify.⁵¹³

Using these pre-defined offerings, IFTTT users can build an applet to resemble the functionality of the zone scene technology in at least two different methods using the “Button press” trigger:

- 1) Choosing an action for resuming/playing music on a first Sonos speaker, and choosing an action for resuming/playing music on a second Sonos speaker;⁵¹⁴ or
- 2) Choosing an action for starting playback of Spotify music on a first speaker, such as a Google or Amazon speaker, and choosing an action for resuming/playing music on a second speaker, such as a Sonos speaker.⁵¹⁵

I understand that an IFTTT user may create multiple applets using one or more overlapping speakers between each applet. Specifically, a user may create one applet utilizing a first speaker and a second speaker, and also create a second applet which utilizes a first speaker and a third speaker, with each speaker in a group set up to play back the same song as the others in that group. The IFTTT user is also allowed to name and

⁵¹¹ “Find the plan for you,” *IFTTT.com*, <https://ifttt.com/plans>.

⁵¹² SONOS-SVG2-00224846-850 at 846, 848; SONOS-SVG2-00227578-583 at 580; SONOS-SVG2-00227600-604 at 600, 602.

⁵¹³ SONOS-SVG2-00224846-850 at 848; SONOS-SVG2-00227605-606; SONOS-SVG2-00227613-614.

⁵¹⁴ SONOS-SVG2-00227566.

⁵¹⁵ SONOS-SVG2-00227570.



save each applet.⁵¹⁶ To activate the IFTTT applets, the user simply activates the “Button press” trigger (which can be saved, for example, as a widget on an iPhone home screen), which then implements one of the three methods listed above, causing a group of speakers to play a song. In other words, *if* the “Button press” trigger is activated, *then* the relevant Sonos or Spotify actions are executed, resulting in a group of speakers playing a song.⁵¹⁷

As such, IFTTT provides for a portion of the zone scene functionality contemplated by the Asserted Claims of the ’885 Patent and ’966 Patent. Specifically, the actions described above allow an IFTTT user to program, name, save, and then activate a first group of speakers for music playback, as well as program, name, save, and activate a second group of speakers for music playback, where there is at least one overlapping speaker between the first speaker group and second speaker group. The speakers in each group can also be set up to play the same song. However, I understand IFTTT is unable to enable the entire functionality contemplated in the Asserted Claims of the ’885 Patent and ’966 Patent. For example, music that is played through a speaker group via an IFTTT applet is not synced.

The “Pro” subscription is the cheapest plan that allows users to create two multi-action applets, thereby replicating the functionality of zone scene technology. Given that, I have assumed that the “Pro” subscription fee would be an appropriate starting point for determining what Sonos would charge Google as a per-device royalty for each of the Zone Scene Patents.

Around the time of the hypothetical negotiation for the ’885 Patent, in November 2020, the “Pro” subscription cost \$3.99 per month, or \$11.97 per quarter. In September 2020, a few months before the hypothetical negotiation, users were given the option of selecting their own subscription fee, as long as it was at least \$1.99 per month. I understand this was the first instance in which IFTTT users were asked to pay for the services provided by IFTTT applets.⁵¹⁸ In order to be conservative, I have provided a range of “Pro” subscription fees as a starting point including the lowest fee IFTTT offered of \$1.99 per month (\$5.97 per quarter) as a low price and the next lowest offered price, which was \$3.99 per month (\$11.97 per quarter), as a high price.

Around the time of the hypothetical negotiation for the ’966 Patent, in November 2019, the “Pro” subscription was provided at no cost to IFTTT users. As stated above, IFTTT users were first asked to pay for IFTTT services for the first time in September 2020, with the option to subscribe to the “Pro” plan for as little as \$1.99 per month. I believe that the parties would understand that IFTTT would not be able to offer its services for free indefinitely, and the initial prices offered would be known or knowable at the time of the hypothetical negotiation for the ’966 Patent. In order to be conservative, I use \$1.99 per month, the lowest IFTTT “Pro” plan price offered as a starting point to my reasonable royalty analysis for the ’966 Patent; this results in \$5.97 per quarter.

⁵¹⁶ SONOS-SVG2-00227592; SONOS-SVG2-00227584-585.

⁵¹⁷ Opening Almeroth Report, pp. 386-395.

⁵¹⁸ “IFTTT.com Plans,” *Wayback Machine*, <https://web.archive.org/web/20200930053720/https://ifttt.com/plans>; Hearn, P., “IFTTT Pricing: Is Pro Worth The Cost?” Online Tech Tips, <https://www.online-tech-tips.com/software-reviews/ifttt-pricing-is-pro-worth-the-cost/>.



I understand that IFTTT's "Pro" subscription currently gives a user the ability to create 20 applets, however, the functionality that replicates zone scene technology can be accomplished on just two applets. Therefore, I apportion IFTTT's "Pro" subscription fees by a factor of 2/20 (10%) to get a low per-device subscription fee of \$0.60 per quarter and a high per-device subscription fee of \$1.20 per quarter for the '885 Patent.⁵¹⁹ For the '966 Patent, I apportion the IFTTT "Pro" subscription fee by the same factor (2/20).

Figure 36: Quarterly IFTTT Subscription Fees for Comparable Zone Scene Technology⁵²⁰

	<u>Low</u>	<u>High</u>
IFTTT "Pro" Price Subscription	\$ 5.97	\$ 11.97
Apportionment Metric	<u>10.0%</u>	<u>10.0%</u>
Quarterly Subscription Fee for Comparable Zone Scene Functionality	<u>\$ 0.60</u>	<u>\$ 1.20</u>

IFTTT subscriptions would continue indefinitely as long as the user stays subscribed to the service. However, I have only considered the lifetime value of one smartphone as the total time that the zone scene subscription fee would be applicable. The average lifetime value of a smartphone (*i.e.*, a Google Pixel phone) is two and a half years or ten quarters.⁵²¹ Therefore, I applied the quarterly subscription fee for zone scene to the lifetime value of a smartphone, ten quarters, and then discounted those fees by Google's weighted average cost of capital ("WACC") at the time of the hypothetical negotiation, of 7.4% and 8.8% for the '885 Patent and '966 Patent, respectively, to calculate the NPV of the lifetime value of zone scene technology per device.⁵²² Using the low quarterly subscription fee, the NPV of lifetime value of zone scene technology per device is \$4.27 for the '885 Patent and \$4.04 for the '966 Patent.⁵²³ Using the high quarterly subscription fee, the NPV of lifetime value of zone scene technology per device is \$8.56 and \$8.09.⁵²⁴

⁵¹⁹ Appendices 4.4 and 4.3.

⁵²⁰ Appendix 4.3.

⁵²¹ Jesper, "What is the average lifespan of a smartphone?" *CoolBlue.nl*, <https://www.coolblue.nl/en/advice/lifespan-smartphone.html>; Chng, R., "How Long Can A Smartphone Last? (With 6 Real Examples)," *Valorvortech.com*, <https://valorvortech.com/how-long-can-a-smartphone-last/>; "Average lifespan (replacement cycle length) of smartphones in the United States from 2014 to 2025," *Statista.com*, <https://www.statista.com/statistics/619788/average-smartphone-life/>.

⁵²² Google's weighted average cost of capital as of Q4 2020 and Q4 2019 was 7.4% and 8.8%. *Bloomberg Terminal*, accessed November 18, 2022. Appendices 4.1.4 and 4.2.4.

⁵²³ Appendices 4.1.4 and 4.2.4.

⁵²⁴ Appendices 4.1.4 and 4.2.4.

Figure 37: NPV of Lifetime Value of '885 Patent Per Device⁵²⁵

Low	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023
Quarterly Subscription Fee for '885 Patent - Low	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60
Partial Period Factor	0.101	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.899
Mid-Period Factor	0.051	0.551	1.601	2.601	3.601	4.601	5.601	6.601	7.601	8.601	9.551
Present Value Factor	0.996	0.961	0.892	0.831	0.773	0.720	0.670	0.624	0.581	0.541	0.506
Present Value	\$ 0.06	\$ 0.57	\$ 0.53	\$ 0.50	\$ 0.46	\$ 0.43	\$ 0.40	\$ 0.37	\$ 0.35	\$ 0.32	\$ 0.27
NPV of Lifetime Value of '885 Patent Per Device - Low	\$ 4.27										
High	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023
Quarterly Subscription Fee for '885 Patent - High	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20
Partial Period Factor	0.101	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.899
Mid-Period Factor	0.051	0.551	1.601	2.601	3.601	4.601	5.601	6.601	7.601	8.601	9.551
Present Value Factor	0.996	0.961	0.892	0.831	0.773	0.720	0.670	0.624	0.581	0.541	0.506
Present Value	\$ 0.12	\$ 1.15	\$ 1.07	\$ 0.99	\$ 0.93	\$ 0.86	\$ 0.80	\$ 0.75	\$ 0.70	\$ 0.65	\$ 0.54
NPV of Lifetime Value of '885 Patent Per Device - High	\$ 8.56										
NPV Inputs											
NPV Date	24-Nov-20										
Year End	31-Dec-20										
Partial Period	0.101										
Discount Rate	7.4%										

Figure 38: NPV of Lifetime Value of '966 Patent Per Device⁵²⁶

Low	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022
Quarterly Subscription Fee for '966 Patent - Low	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60
Partial Period Factor	0.153	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.847
Mid-Period Factor	0.077	0.577	1.653	2.653	3.653	4.653	5.653	6.653	7.653	8.653	9.577
Present Value Factor	0.994	0.953	0.870	0.799	0.735	0.675	0.621	0.571	0.524	0.482	0.446
Present Value	\$ 0.09	\$ 0.57	\$ 0.52	\$ 0.48	\$ 0.44	\$ 0.40	\$ 0.37	\$ 0.34	\$ 0.31	\$ 0.29	\$ 0.23
NPV of Lifetime Value of '966 Patent Per Device -	\$ 4.04										
High	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022
Quarterly Subscription Fee for '966 Patent - High	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20
Partial Period Factor	0.153	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.847
Mid-Period Factor	0.077	0.577	1.653	2.653	3.653	4.653	5.653	6.653	7.653	8.653	9.577
Present Value Factor	0.994	0.953	0.870	0.799	0.735	0.675	0.621	0.571	0.524	0.482	0.446
Present Value	\$ 0.18	\$ 1.14	\$ 1.04	\$ 0.96	\$ 0.88	\$ 0.81	\$ 0.74	\$ 0.68	\$ 0.63	\$ 0.58	\$ 0.45
'966 Patent Per Device - High	\$ 8.09										
NPV Inputs											
NPV Date	5-Nov-19										
Year End	31-Dec-19										
Partial Period	0.153										
Discount Rate	8.8%										

As discussed above, I understand that while asserted claim 1 of the '885 Patent is directed to and infringed by a single “zone player” with certain functional capability, the claim recites three separate “zone players” (*e.g.*, speakers), two separate groups or zone scenes, and one common or overlapping “zone player” at a

⁵²⁵ Appendix 4.1.4.

⁵²⁶ Appendix 4.2.4.



minimum.⁵²⁷ Of the people who own a smart speaker in the U.S., 29% have three or more smart speakers.⁵²⁸ Applying a 29% apportionment to the NPV of the lifetime value of zone scene technology per device leads to low and high zone scene quantitative indicators of \$1.24 and \$2.48 for the '885 Patent and \$1.17 and \$2.35 for the '966 Patent, respectively.⁵²⁹

Figure 39: Per-Device Zone Scene Quantitative Indicators for the '885 Patent⁵³⁰

Metric	Low	High
NPV of Lifetime Value of '885 Patent Per Device	\$ 4.27	\$ 8.56
Apportionment Metric - Share of Households with Zone Scene Capability	29.0%	29.0%
'885 Patent Quantitative Indicator	\$ 1.24	\$ 2.48

Figure 40: Per-Device Zone Scene Quantitative Indicators for the '966 Patent⁵³¹

Metric	Low	High
NPV of Lifetime Value of '966 Patent Per Device	\$ 4.04	\$ 8.09
Apportionment Metric - Share of Households with Zone Scene Capability	29.0%	29.0%
'966 Patent Quantitative Indicator	\$ 1.17	\$ 2.35

12.3 Cost Approach

As described in Economic Damages in Intellectual Property:

*The cost approach values assets based on the cost to create and develop the assets. The premise behind the cost approach is that no party involved in an arm's-length transaction would be willing to pay more to use the property than the cost to replace the property. In the context of patents, for instance, a potential licensee would not pay more to license a patent than the cost to design around the technology contributed by the patent. An alternative to designing around the technology would be to purchase the technology. Accordingly, a potential licensee would not pay more to license the technology than it would have to pay to purchase or create the technology.*⁵³²

⁵²⁷ Opening Almeroth Report, pp. 27-28.

⁵²⁸ "The Smart Audio Report – Spring 2020," NPR, slide 9, https://www.nationalpublicmedia.com/uploads/2020/04/The-Smart-Audio-Report_Spring-2020.pdf.

⁵²⁹ Appendices 4.1.3 and 4.2.3.

⁵³⁰ Appendix 4.1.3.

⁵³¹ Appendix 4.2.3.

⁵³² Slottje, D., "Economic Damages in Intellectual Property," pp. 291-293.



speakers, Smart Displays, and Smart Clocks so all of your devices play the same audio throughout your house.”); SONOS-SVG2-00055113 (Google marketing video touting ability to create and save speaker groups).

Similarly, Google’s internal documents also recognize the importance of being able to play synchronous audio on speaker groups of Accused Google Players. See, e.g., GOOG-SONOSWDTX-00040384 at 85 (document titled “Multizone Audio Design” stating “[t]he primary goal of multiroom audio is to play out the audio in sync across all the devices in a group”); GOOG-SONOSNDCA-00056732-77 at 38.⁶⁷⁴

Given the quantitative factors indicating extensive use of the direct control technology, along with qualitative factors of zone scene usage and promotion from Google marketing materials, I believe that Google has made extensive use of the Accused Instrumentalities. Therefore, I find that this consideration would tend to favor the licensor in this hypothetical negotiation.

Impact on Hypothetical Negotiation: Favors Licensor

14.12 Factor #12: The portion of the profit or the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

Similar to Factors #1 and #2, Factor #12 also relates to the Market Approach and considers licenses and licensing practices within the relevant industry.

As above, I have considered relevant agreements in my use of the Market Approach. Therefore, the impact of this factor is reflected in my quantitative analysis described above in Section 12.1.

Impact on Hypothetical Negotiation: Considered in Market Approach

14.13 Factor #13: The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

Factor 13 extends the analysis performed in Factors #8 and #11 and relates to the portion of the realizable profit that should be attributed to non-patented elements. Analysis of this factor is sometimes related to the Income Approach in the context of intellectual property valuation, which I have addressed above in Section 12.2. As discussed above, the Income Approach attempts to value an asset by measuring the benefits derived from use of the asset. When used in the context of an intellectual property licensing situation, these benefits are then split in some fashion between the licensee and licensor. The split has the twin effects of giving the licensor reasonable compensation for the use of its intellectual property, and the licensee reasonable compensation for assuming the business risks associated with developing, manufacturing, promoting, and selling the product that embodies the particular technology.

In apportioning the realizable value of the Asserted Patents between Sonos and Google, I have considered Google’s reputation, its promotional efforts, and the normal business risks incurred by Google, as well as

⁶⁷⁴ Opening Almeroth Report, p. 308.



their know-how related to the Accused Instrumentalities. In the context of the Asserted Patents, Sonos would act similarly to an app developer who wishes to provide its technology for a fee. This is comparable to the companies who offer the comparable casting applications which I discuss in Section 12.1.5. These comparable applications are offered on the Google Play Store and generate revenue either through advertisements or paid subscriptions. Similarly, with respect to the '885 Patent and '966 Patent, IFTTT is also provided as a subscription-based plan. Therefore, I consider Sonos to be similar in the regard that it would provide the technology claimed in the Asserted Patents based on this business model. In this case, Sonos and Google would look to Google's "Services fees" which are provided on a Google Support webpage. Specifically, the service fee for developers with earnings in excess of \$1M per year is 30%.⁶⁷⁵

Figure 62: Google Play Store Service Fees⁶⁷⁶

Service fees

Apps and in-app products sold through Google Play's billing system or an Additional Billing System (as defined below) in accordance with the [Payments policy](#) are subject to a service fee.

As of January 1, 2022, that service fee is equivalent to:

- For developers who are enrolled in the [15% service fee tier](#), the service fee is:
 - 15% for the first \$1M (USD) of earnings each year,
 - 30% for earnings in excess of \$1M (USD) each year.
- For developers who are not enrolled in the [15% service fee tier](#), the service fee is 30%.
- For automatically renewing subscription products purchased by subscribers, the service fee is 15%.

I understand that this business model is already in use and widely accepted by app developers and Google. For instance, to list an app on the Google Play Store, Google charges a 30% "standard commission on apps and in-app purchases of digital goods and services."⁶⁷⁷ Additionally, Google has entered into a revenue-sharing agreement with Apple in which it paid \$1 billion to keep search bar on the iPhone.⁶⁷⁸ This agreement would give Apple a percentage of the revenue Google generates through the Apple device – this rate was testified during pretrial information to be 34%.⁶⁷⁹

Therefore, the revenue split between an app developer who is providing an application and Google who is hosting the application on the Play Store, has already been decided and appropriately compensates each party for the risks it bears. In my opinion, at the hypothetical negotiation, the parties would consider that, had

⁶⁷⁵ Google, "Service Fees," *Google.com*, <https://support.google.com/googleplay/android-developer/answer/112622?hl=en>.

⁶⁷⁶ Google, "Service Fees," *Google.com*, <https://support.google.com/googleplay/android-developer/answer/112622?hl=en>.

⁶⁷⁷ Google, "Service Fees," *Google.com*, <https://support.google.com/googleplay/android-developer/answer/112622?hl=en>; Campbell, I., and Alexander, J., "A Guide to Platform Fees," *TheVerge.com*, <https://www.theverge.com/21445923/platform-fees-apps-games-business-marketplace-apple-google>.

⁶⁷⁸ SONOS-SVG2-00056406-407.

⁶⁷⁹ SONOS-SVG2-00056406-407.



Google had a license to sell Sonos's Direct Control and Zone Scene technology, the business relationship would be similar to that with an app developer. To appropriately account for Google's contribution to the incremental revenue and margins it has generated through the Asserted Patents, Google would receive 30% and Sonos would receive 70%.

Therefore, I find that this consideration would tend to favor the licensor in this hypothetical negotiation.

Impact on Hypothetical Negotiation: Favors Licensor

14.14 Factor #14: The opinion testimony of qualified experts.

The extent to which I have considered the opinion testimony of qualified experts is reflected throughout my report. I reserve the right to supplement my opinions upon the review of other expert reports and testimony that are provided after the date of this report.

Impact on Hypothetical Negotiations: Considered Throughout My Report

14.15 Factor #15: The royalty that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee – who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention – would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.

Factor #15 describes the integration of the other factors within the willing buyer/willing seller hypothetical negotiation framework. As the name implies, the parties in the negotiation are presumed to be willing. They both seek, as businesspersons, to reach an agreement. Another key factor in this hypothetical negotiation is that both parties are assumed to "lay their cards on the table" so that each understands the other's position. Lastly, the hypothetical negotiation considers facts that are known or knowable at the time and presumes that the Asserted Patents are valid and infringed by the Accused Instrumentalities.

Some of the considerations discussed throughout this report which would frame the hypothetical negotiation are summarized below:

- The parties would have considered that neither Sonos nor Google have entered into technically and economically comparable license agreements which can be used to determine an appropriate royalty rate indicator;
- The parties would have considered third-party comparable applications and would have considered a \$1.99 one-time subscription fee per device to be an appropriate quantitative indicator for the '033 Patent;
- The parties would have considered the incremental per-device advertising and subscription revenue attributable to the '033 Patent of **\$1.12** and **\$0.27** respectively to be appropriate quantitative indicators for the '033 Patent;



- The parties would have considered the apportioned net present value of the zone scene technology of \$1.24 to \$2.48 per device to be appropriate quantitative indicators for the '885 Patent;
- The parties would have considered the apportioned net present value of the zone scene technology of \$1.17 to \$2.35 per device to be appropriate quantitative indicators for the '966 Patent;
- The parties would have considered that Google's hardware products are sold as a loss leader to increase the Google ecosystem and the lifetime value of users through advertising and subscriptions;
- The parties would have considered the technical utility and advantages of the Asserted Patents and the lack of non-infringing, commercially acceptable alternatives;
- The parties would have considered Google's services fees for application developers of 30% and Sonos's share of 70% as fair sharing of the value of the Asserted Patents.

In consideration of the *Georgia-Pacific* Factors, it is my opinion that Sonos would be in a relatively stronger bargaining position than Google in the hypothetical negotiation in this case. Based upon Google's demonstrated revenue sharing with app developers, it is my opinion that Sonos would keep 70% of the revenue generated from Google's infringing use. Therefore, I have applied Sonos's 70% revenue share to each of the quantitative indicators I have calculated above which are based upon revenue as a starting point. With respect to the affirmative direct control revenue methodology described in Section 14.13, I have applied the 70% share to the advertising revenue direct control quantitative indicator of \$1.12 resulting in an advertising revenue royalty rate due Sonos of \$0.79.⁶⁸⁰ I have similarly applied the 70% share to the subscription revenue direct control quantitative indicator of \$0.27 resulting in a subscription royalty rate due Sonos of \$0.19.⁶⁸¹

Figure 63: '033 Patent Advertising Revenue Royalty Rate⁶⁸²

Description	Value
Advertising Revenue - '033 Patent Quantitative Indicator	\$ 1.12
Sonos's Share of Revenue Based on Revenue Split	70.0%
Advertising Revenue Royalty Rate	\$ 0.79

⁶⁸⁰ Appendix 5.1.1.

⁶⁸¹ Appendix 5.1.2-S.

⁶⁸² Appendix 5.1.1.

**Figure 64-S: '033 Patent Subscription Revenue Royalty Rate**⁶⁸³

Description	Value
Subscription Revenue - '033 Patent Quantitative Indicator	\$ 0.27
Sonos's Share of Revenue Based on Revenue Split	70.0%
Subscription Revenue Royalty Rate	\$ 0.19

Alternatively, if the trier of fact determines that is necessary to begin with margin, I have similarly calculated direct control quantitative indicators based upon Google's advertising and subscription margins. However, given that these calculations are based upon margins, and not revenues (which the 70%/30% revenue applies), I have not performed the same 70%/30% revenue sharing split as with the calculations which begin with revenue. Further, in utilizing the margin as a starting point, Google has already realized its costs and the remaining profit is the incremental profit Google has earned based upon the infringing technology. Therefore, with respect to the direct control quantitative indicators beginning with margin, 100% of the margin is due Sonos. The margin quantitative indicators remain the same at \$0.45 for advertising profit and \$0.05 for subscription profit.⁶⁸⁴

With respect to the alternative direct control comparable application methodology described in Section 14.13, I have applied the 70% share to the \$1.99 quantitative indicator resulting in an alternative direct control royalty rate of \$1.39 per '033 Accused Instrumentality.

Figure 65: Alternative '033 Royalty Rate⁶⁸⁵

Metric	Value
Quantitative Indicator - '033 Patent Comparable App	\$ 1.99
Share Based Upon Sonos's Revenue Split	70.0%
Alternative '033 Patent Royalty Rate	\$ 1.39

Similar to the methodology for Direct Control, I have also applied the 70% revenue share to the quantitative indicators I have calculated for the '885 Patent. Assuming Sonos would keep 70% of the zone scene quantitative indicators results in \$0.87 to \$1.74 per '885 Accused Instrumentality.⁶⁸⁶

⁶⁸³ Appendix 5.1.2-S.

⁶⁸⁴ Appendices 5.2.1-S and 5.2.2-S.

⁶⁸⁵ Appendix 6.2.

⁶⁸⁶ Appendix 4.1.2.



INTELLECTUAL CAPITAL EQUITY

19. SIGNATURE

Respectfully submitted,



James E. Malackowski

December 9, 2022

Date